



Chicago Metropolitan  
Agency for Planning

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**Progress Report on Kishwaukee River Watershed  
Planning:**

**“Vision of Land Use” and Water Quality**

**Environment and Natural  
Resources Committee**

**October 3, 2007**

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# Why be concerned about land use in watershed planning?

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- The B-MAG framework requires developing a “vision of land use” in the watershed
- It is fundamental to watershed *protection* (as opposed to *restoration*)

# B-MAG Vision for the Watershed

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- Outline issues and opportunities, incorporating local communities comprehensive and other plans;
- A vision for wastewater treatment and water supply and possibly other infrastructure;
- A vision for land use; and,
- A vision for protection and/or restoration of water quality.

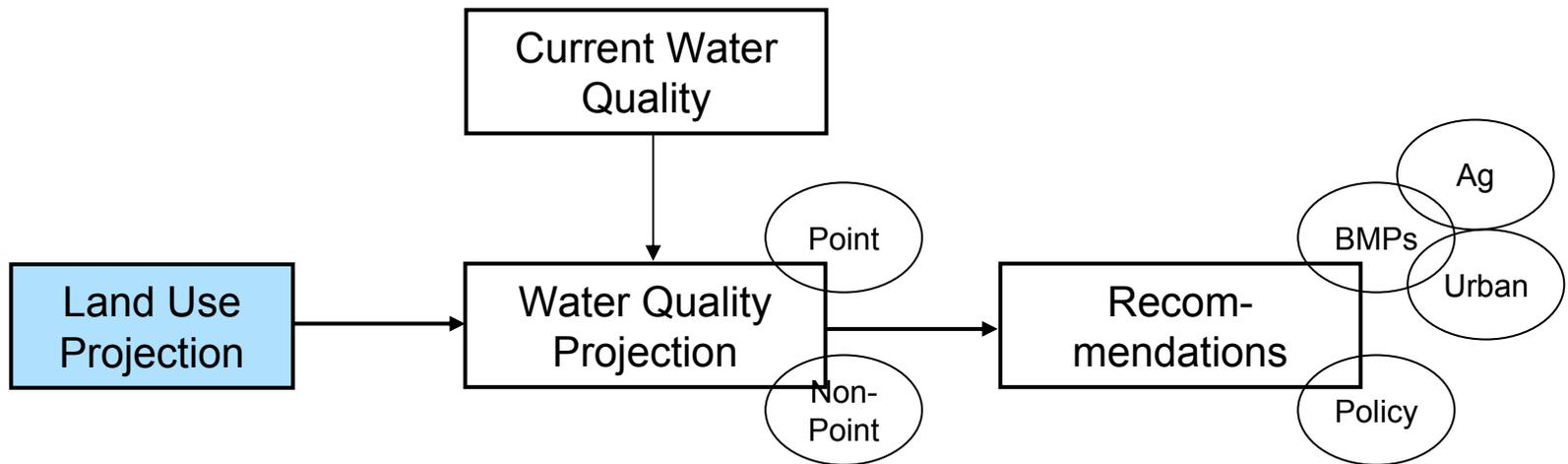
# Understanding the project

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- The watershed plans should:
  - Identify water quality protection / restoration needs and strategies
  - Assign responsibility for implementation to municipalities and other stakeholders
- Municipalities will be asked to adopt the plans
- Illinois EPA will hold a public comment period and then incorporate the plans into the Areawide Water Quality Management Plan
- For a period of 5 – 7 years (until plan update), Illinois EPA must determine that municipalities are meeting their obligations under the plan before they are eligible for:
  - Low-interest financing for wastewater treatment plants
  - FPA expansion

# Planning Process

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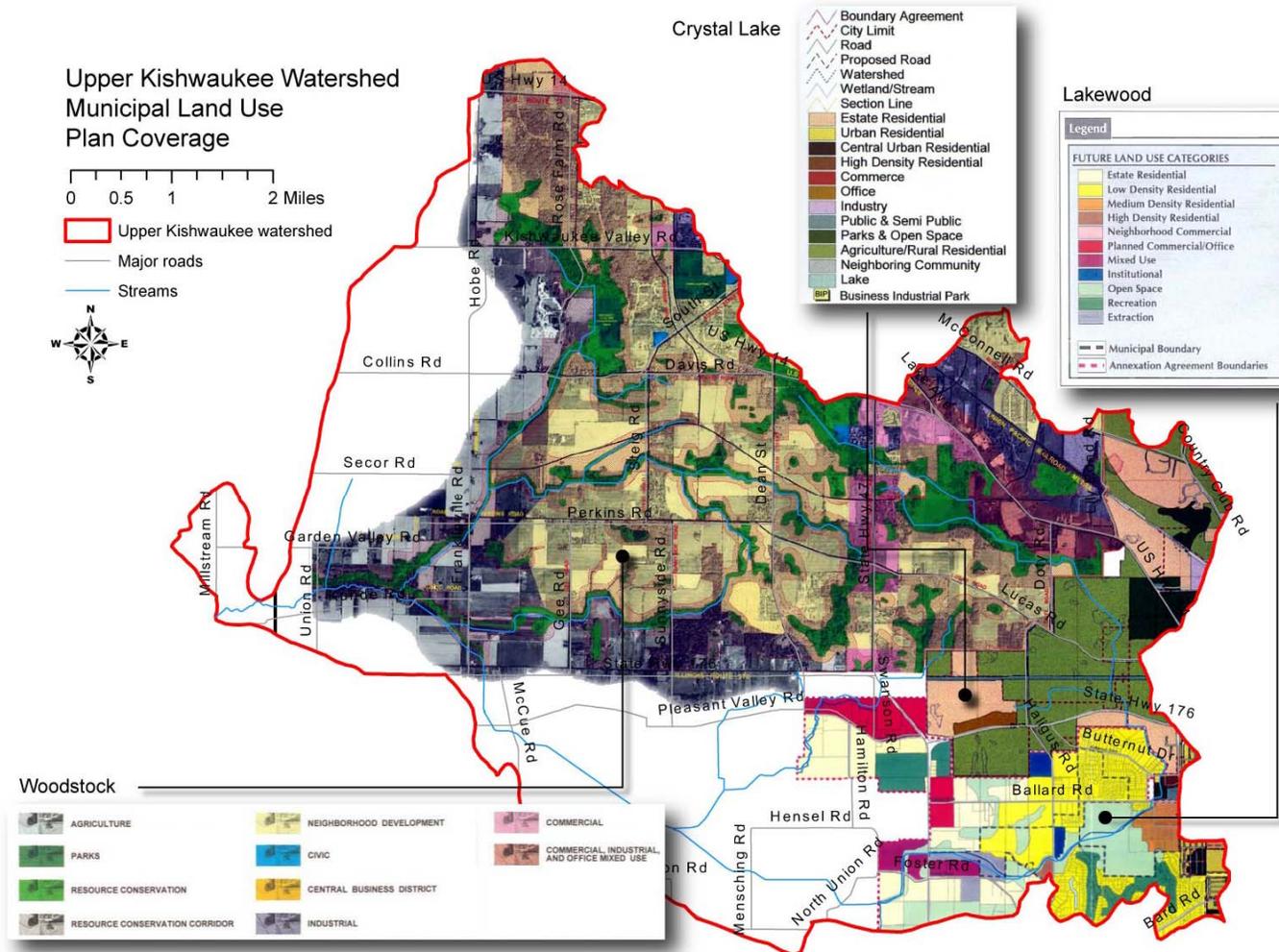


# How should future land use be projected?

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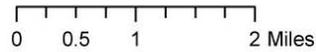
- Options:
  - CMAP regional population forecasts
  - Mathematical models
  - Municipal comprehensive plans
- We need to project land use based on what municipal leaders *want* to happen – the comprehensive plan
  - Compare with CMAP forecasts

# Future land use in municipal comprehensive plans



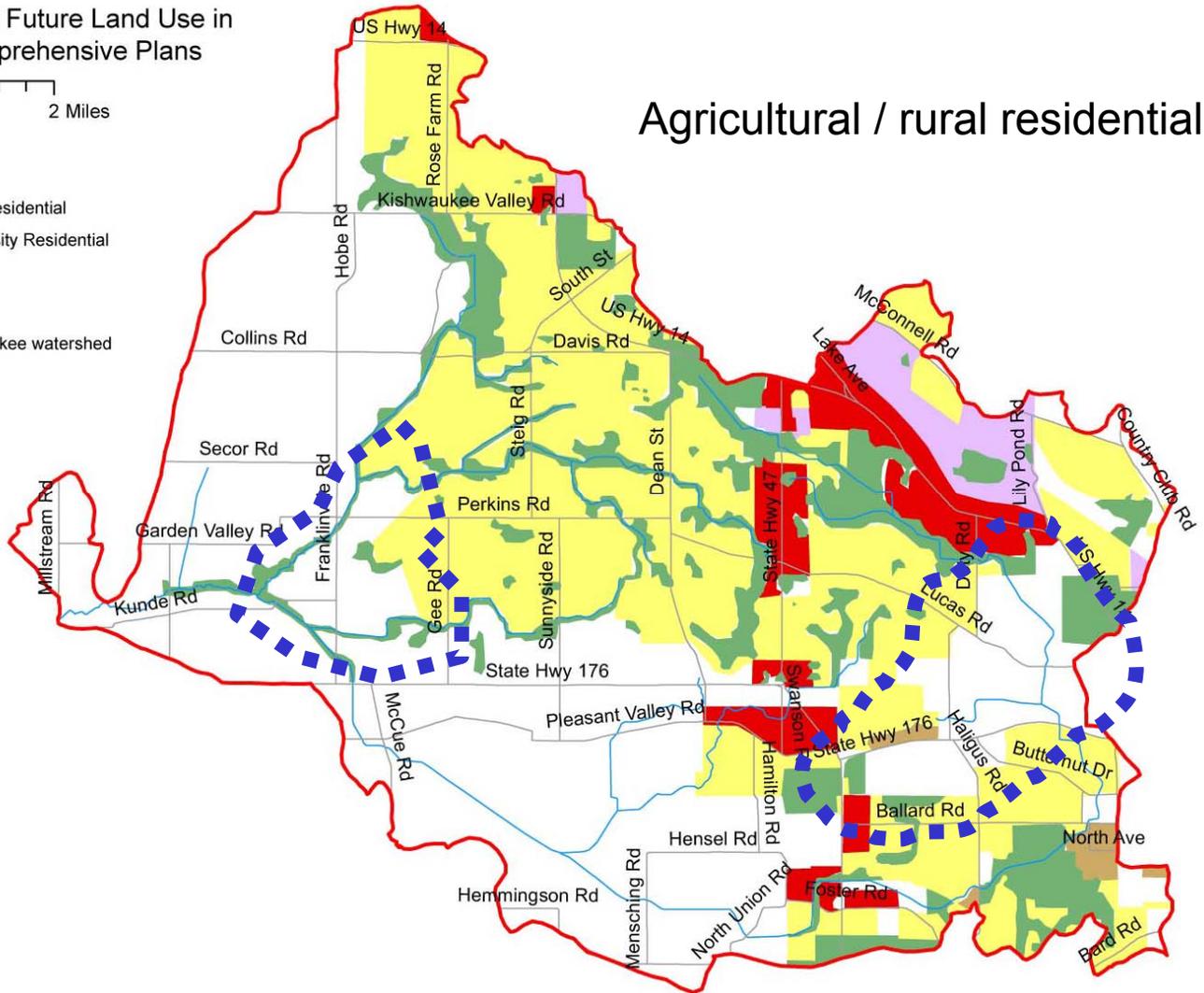
# Digitized future land use from municipal comprehensive plans

Recategorized Future Land Use in Municipal Comprehensive Plans



**Land Use**

- Commercial
- Low Density Residential
- Med/High Density Residential
- Industrial
- Open Space
- Upper Kishwaukee watershed
- Major roads
- Streams



# How would municipal comprehensive plans affect land use in the watershed as a whole?

	Ag	Unprot. Open Space	Comm	Lo Dens Res	Med/ Hgh Dens Res	Ind	Prot. Open Space	Total
Existing in Watershed (2005)	17,137	5,962	204	4,514	33	554	2,836	31,240
Percent of Area (2005)	54%	19%	1%	14%	0%	2%	9%	99%
Projected with Comp Plan Implementation	9,085	1,987	1,535	12,114	118	1,174	5,389	31,403
Percent of Area (Horizon Year)	29%	6%	5%	38%	0%	4%	17%	99%

# How would municipal comprehensive plans effect imperviousness?

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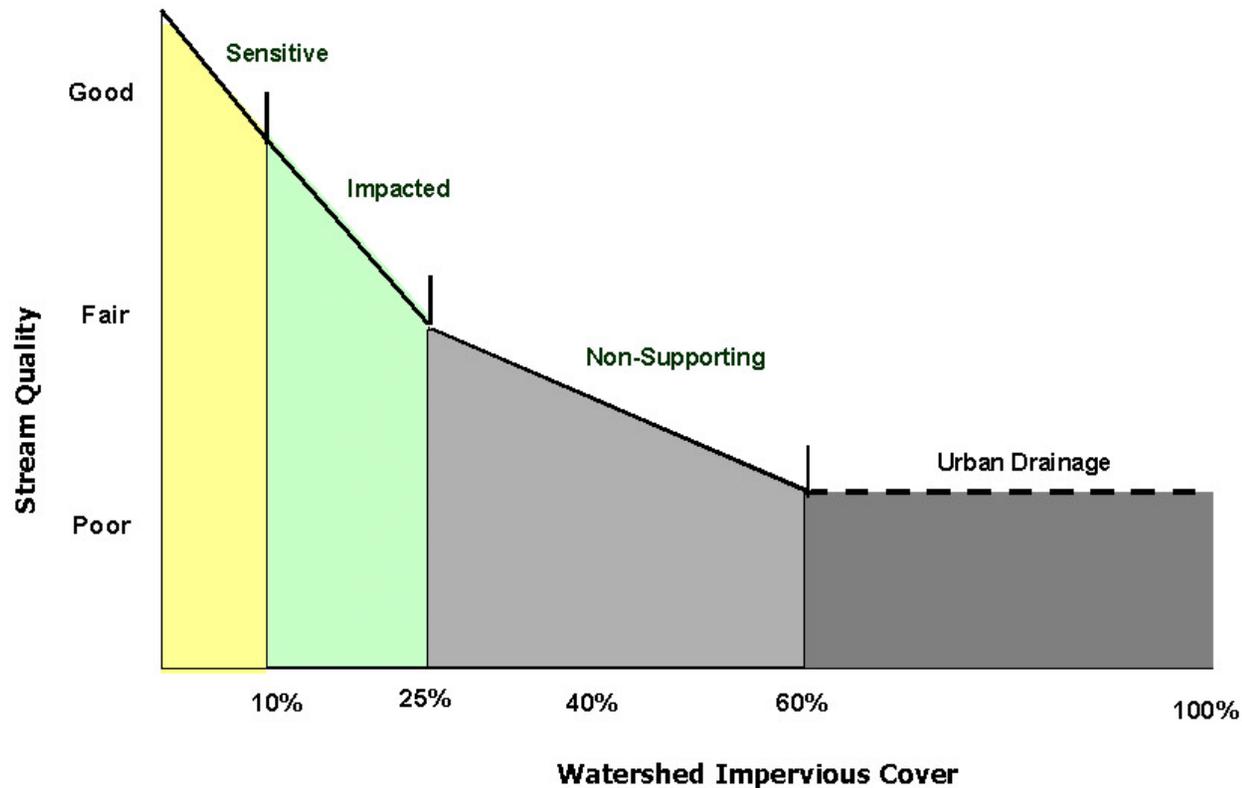
2001	2005	Build-out
3%	4~7%	≥15%

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*Note:* Estimated from 2001 National Land Cover Dataset. Does not take into consideration growth in unincorporated areas. Total imperviousness only.

# Why is imperviousness important?

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# Initial thoughts on the land use component of the watershed plan

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- Total recommended open space or natural area acreage should be recommended
- Acceptable **effective** impervious surface should be recommended — distribute by catchment
- A prescribed land use mix should *not* be part of the “vision of land use”
  - Nevertheless, different land uses are correlated with different types and intensities of pollutant runoff
  - Use different BMPs or performance standards for different land uses

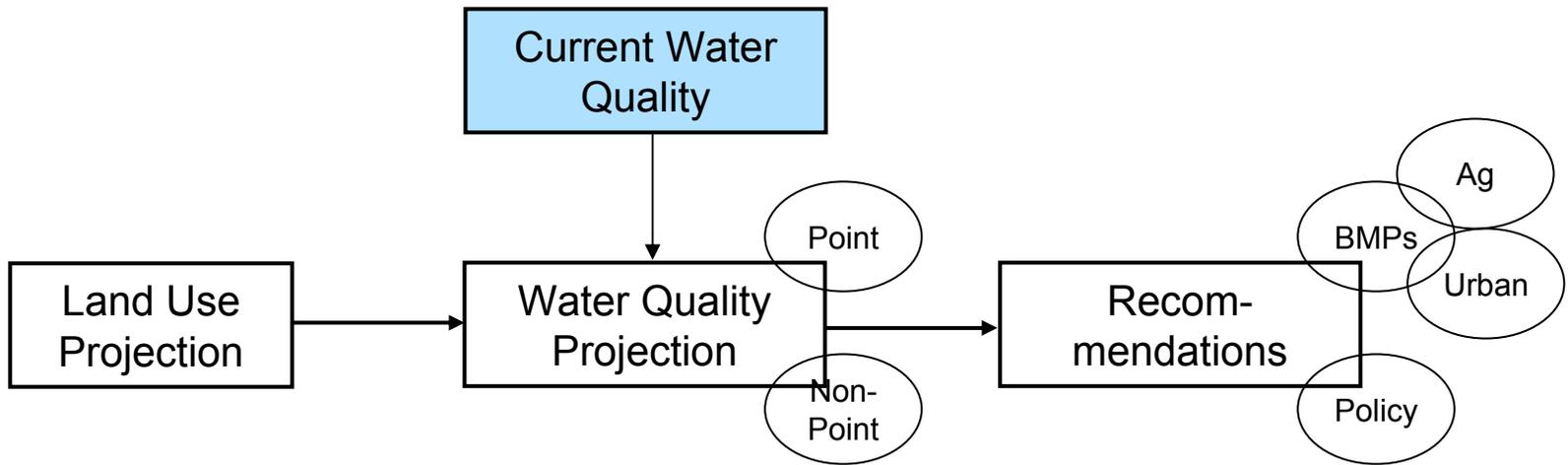
# Initial thoughts on the land use component of the watershed plan

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- Which may mean:
  - Analysis of allowed densities and open space standards
  - But household growth projected for watershed should be accommodated

# Process

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# Existing impairments

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- Upper Kishwaukee River
  - Potential causes:
    - Altered riparian vegetation (no numeric standard)
    - Sedimentation (no numeric standard)
    - Total nitrogen (no numeric standard)
    - PCBs (likely legacy contaminant)
- Beaver Creek
  - No impairment
- Lawrence Creek
  - Impairment unknown; Total N and Total P, neither of which have numeric standards

# Existing impairments

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- Upper Kishwaukee River
  - Potential sources:
    - Channelization
    - Crop production
    - Contaminated sediments
    - Municipal point sources
    - Source unknown
- Lawrence Creek
  - Potential sources:
    - Source unknown
    - Industrial point source discharge (ceased operation)

# Setting load targets

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- Two ways:
  - By stakeholder values
  - As a Total Maximum Daily Load (TMDL)
    - Point source allocation + Non-point allocation + MOS = TMDL
- Why is a TMDL difficult here?
  - No numeric standards
  - Very poor data availability (water quality and flow data)
  - No impairment in Beaver Creek
- Should investigate alternative TMDL approaches:
  - Impervious cover
  - Hydrologic condition; correlation with stream biology

# Programmatic

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- The quasi-regulatory force of the plans is dependent on IEPA's control over:
  - Low-interest financing for wastewater treatment plants
  - NPDES permitting (treatment plants and MS4s)
  - FPA expansion
- Then how might the plans affect municipalities?

# Who's got a stake?

	FPA boundary <i>in watershed</i> is smaller than:	
	Current muni boundary	Future muni boundary
Crystal Lake	No	No
Lakewood	No	No
Woodstock	No	Yes
Harvard	Yes	Yes
Capron	No	Yes
Timberlane	Septic	Septic
Belvidere	No	Unclear
Poplar Grove	Yes	Yes

# Who's got a stake?

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	WWTP discharge in watershed	
	Current	Expansion planned
Crystal Lake	No	—
Lakewood	Yes	No
Woodstock	Yes	Yes
Harvard	No	—
Capron	Yes	Yes
Timberlane	No	—
Belvidere	No	—
Poplar Grove	Yes	Yes

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# Cross-watershed issues

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- Consider municipal compliance with watershed plan even if a requested FPA extension, plant expansion, etc. is in another watershed and does not discharge to the watershed with plan coverage.
  - Increases range of quasi-regulatory authority.
- Wastewater discharges from a service area in another watershed must be covered under the plan

# Expected products

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- Three short glossy action plans aimed at municipal leaders and other stakeholders
- Technical appendix
- Program recommendations for IEPA

# Committee questions

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- Is the approach to developing a “vision of land use” appropriate?
- Do you have any suggestions regarding how to set load targets?
  
- We will return to present water quality evaluation and draft recommendations